Tribhuvan University
Institute of Science and Technology
Course Title: System Analysis and Design
Course no : CSC-252   **Full Marks: 60+20+20**
Credit hours: 3   **Pass Marks: 24+8+8**

Nature of course : Theory (3 Hrs.) + Case Study (3Hrs)

Course Synopsis: This course help launch the careers of successful systems analyst – or of users assuming an active role in building systems that satisfy their organization's information needs. Also provides a solid foundation of systems.

Goal: This course will provide the concept of system representation.

S.N	Chapter	Description	Hours
1	Overview of Systems Analysis and Design	Introduction to system analysis and design Types of Information Systems(Transaction Processing system, Management Information System, Decision Support System and Expert System) Systems Development Life cycle(SDLC) Systems analysis and design tools :Prototyping, Joint Application Design	4 Hrs
2.	Modeling Tools for Systems Analyst	System Analyst (Introduction ,Roles, and Skills) Context Diagram Data Flow Diagram(level 0,Level1 and Level2) CASE tools E-R Diagram	5 Hrs.
3	Structured Methodologies	The need for a Structured Methodology Role of CASE in data modeling Advantages and Disadvantages of Modeling Data Dictionaries Modeling tools: Structure English, Decision Table and Decision Tree)	6 Hrs.
4.	Systems Analysis	Systems planning and initial Investigation Information Gathering Techniques(Interviews and Questionnaires) The tools of Structured Analysis Feasibility Study-(Introduction ,Steps in Feasibility analysis) Cost-Benefit Analysis(Direct and Indirect Cost, Tangible and Intangible Benefit) Payback Period	8 Hrs.

5	Systems Design	The process and Stages of systems Design Designing Forms and Report: The process of Formatting Forms and Reports Designing Database: The process, Normalization(Up to 3rd Normal form),Transferring E-R diagram to Relations File Organization (Introduction, Organization of Records in Files)	8 Hrs.
6	System Implementation	System Implementation: Introduction, The process of Coding, Testing and Installation) The Process of Documenting the System, Training Users and Supporting Users Software Application Testing: Types of Testing Quality Assurance Maintenance: Corrective, Adaptive, Perfective, Preventive The process of maintaining Information System Cost of maintenance Managing Maintenance Measuring effectiveness of maintenance	8 Hrs.
7	Object- Oriented Analysis and Design	Hardware / Software Selection and the Computer Contract, Project Scheduling and Software Introduction Object-Oriented Development Life Cycle The Unified Modeling Language Use-Case Modeling, Object Modeling: Class Diagrams, Dynamic Modeling: State Diagrams Dynamic Modeling: Sequence Diagramming, Analysis Verses Design	6 Hrs.
		Total	**45 Hrs.**

Case studies: Student must have to do one case study covers all chapters.

Text Book:
- ✓ Jeffrey A. Hoffer, Joey F. George, Joseph S. Valacich, **Mode rn Systems Analysis and Design,** Pearson Education, Second Edition

References:
- ✓ Englewood Cliffs, New Jersey, **Systems Analysis and Design.** Jeffrey L. Whitten, Loonnie D. Bentley, 5rd Edition, **Systems Analysis and Design Methods.**

✓ Grady Booch, Pearson Education, Second Edition, **Object Oriented analysis and design**
   with applications .

✓ V.Rajaraman, Prentice-Hall, Second Edition, **Analysis and Design of Information System**

S.N	NAME	INSTITUTION	SIGNATURE
1.	Dr. Subarna Shakya	NITC	
2.	Mr Rajan Karmacharya	St. Xavier's	
3.	Mr. Sarbin Sayami	Kathford	
4.	Mr. Hiranya Bastakoti	Ascol	